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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,046	04/24/2001	Philippe Antoine	Q63899	3700
7590 10/29/2004 SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC Pennsylvania Avenue, N.W. Washington, DC 20037-3213			EXAMINER KIM, JUNG W	
			ART UNIT 2132	PAPER NUMBER

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/840,046	Applicant(s) ANTOINE, PHILIPPE	
	Examiner Jung W Kim	Art Unit 2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/24/01</u> . | 6) <input type="checkbox"/> Other: ____  |

### **DETAILED ACTION**

1. Claims 1-6 have been examined. Applicant in the preliminary amendment filed on April 24, 2004 amended the Abstract and Disclosure.

#### ***Claim Objections***

2. Claims 3 and 6 are objected to because of the following informalities: claims 3 and 6 refer to a pseudo-random sequence generator defined in claim 1; however, claim 1 defines a method of generating a pseudo-random sequence; claim 2 defines a pseudo-random sequence generator. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-6 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

5. The claim(s) are replete with indefinite and functional or operational language: the claims list references in parenthesis, such as DMT1, DMt1, DMT2, PR-GEN1, SCR1, L=4, N=8, N'=9, PRMS1, CHANNEL, MC-TX, DIV1, EMB1, SEL, COM, MC-RX, PRMS2, PRMS1', which are not clearly defined as limitations of the claims. Further, it is not clear if certain values specified within parenthesis are claimed limitations, such as L=4, N=8 and N'=9: the specification clearly defines such limitations as merely

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examples and not "realistic values". See Disclosure, page 10, lines 20-25. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited. To further prosecution of the application, the portions of the claims within parenthesis will not be interpreted as claimed limitations.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moroney et al. U.S. Patent No. 5,054,067 (hereinafter Moroney) in view of admitted prior art in applicant's disclosure (hereinafter Admission).

8. As per claim 1, Moroney discloses a method to generate a pseudo-random sequence of data symbols (see Moroney, Figure 2), the method comprising:

- a. producing a pseudo-random bit sequence by repetitively generating a pseudo-random sequence of L bits, L being a first integer value (see Moroney, col. 3, line 46);

- b. packetizing into data symbols thereby using N bits of the pseudo-random bit sequence per data symbol, N being a second integer number, to thereby generate the pseudo-random sequence of data symbols, characterized in that the packetizing comprises:
- i. dividing the pseudo-random bit sequence into strings of N' bits, N' being a third integer value larger than N (see Moroney, col. 3, lines 49-62); and
  - ii. using N bits out of each string of N' to generate a data symbol out of the pseudo-random sequence of data symbols, and leaving N'-N bits out of each string of N' bits unused (see Moroney, col. 3, lines 24-25 and 49-62; Y unused bits).
9. Moroney does not disclose the pseudo-random sequence is generated for multi-carrier data symbols. Admission teaches generating a pseudo-random sequence of multi-carrier data symbols as listed in the ADSL standard specification published in 1998. See Admission, page 1, 2<sup>nd</sup> paragraph. It would be obvious to one of ordinary skill in the art at the time the invention was made to generate a pseudo-random sequence of multi-carrier data symbols using the randomizing steps listed above to further increase the randomness of the sequence. See Moroney, col. 1, lines 49-65. The aforementioned cover the limitations of claim 1.
10. As per claim 2, it is an apparatus claim corresponding to claim 1 and it does not teach or define above the information claimed in claim 1. Therefore, claim 2 is rejected

as being unpatentable over Moroney in view of Admission for the same reasons set forth in the rejection of claim 1.

11. As per claim 3, Moroney covers a generator as outlined above in the claim 2 rejection under 35 U.S.C. 103(a). In addition, a multi-carrier transmitter comprises the pseudo-random sequence generator and further comprising transmitting means, coupled to the pseudo-random sequence generator, and adapted to transmit a pseudorandom sequence of multi-carrier symbols generated by the pseudo-random sequence generator over a communication channel. See Moroney, Figure 2, Reference Nos. 40 and 54. The aforementioned cover the limitations of claim 3.

12. As per claim 4, Moroney covers an apparatus as outlined above in the claim 3 rejection under 35 U.S.C. 103(a). In addition, the apparatus is characterized in that the multi-carrier transmitter further comprises selection means, adapted to select the third integer value  $N'$ , and communication means coupled to the selection means, and adapted to communicate the third integer value  $N'$  to a multi-carrier receiver. See Moroney, Figure 2, Reference No. 48, 'Y'. The aforementioned cover the limitations of claim 4.

13. As per claim 6, Moroney covers an apparatus as outlined above in the claim 2 rejection under 35 U.S.C. 103(a). In addition, a multi-carrier receiver comprises the pseudo-random sequence generator, and further comprising receiving means adapted

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to receive a first pseudo-random sequence of multi-carrier symbols transmitted over a communication channel, and decoding means, coupled to the receiving means and to the pseudo-random sequence generator, and adapted to decode the first pseudo-random sequence of multi-carrier symbols and a second pseudo-random sequence of multi-carrier symbols generated by the pseudo-random sequence generator. See Moroney, col. 4, lines 62-67. The aforementioned cover the limitations of claim 6.

### ***Allowable Subject Matter***

14. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Normile et al. U.S. Patent No. 5,438,622.

Naruse et al. U.S. Patent No. 6,014,408.

### ***Telephonic Inquiry Contacts***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung W Kim whose telephone number is (703) 305-8289. The examiner can normally be reached on M-F 9:00-6:00.

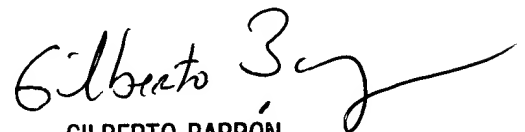
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (703) 305-1830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jung W Kim  
Examiner  
Art Unit 2132

Jk  
October 25, 2004



GILBERTO BARRON  
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